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Original Research Article

The evaluative role of diagnostic hysteroscopy and ultrasonography in abnormal uterine bleeding

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ABSTRACT

Background: Abnormal uterine bleeding (AUB) affects women of reproductive as well as perimenopausal age groups, has significant social and economic impacts. The causes of are Abnormal uterine bleeding numerous and include systemic, anatomical and hormonal disturbances. The usual tools of diagnosis are ultrasonography (USG) followed by endometrial curettage/aspirate which being a blind procedure, may miss out on focal endometrial cavity diseases. Office/diagnostic hysteroscopy has been found to be the method most suitable for making a quick diagnosis and guide treatment. The objective of the present study is to evaluate the role of hysteroscopy and comparing the finding with USG in the diagnosis of abnormal uterine bleeding.
Methods: A retrospective study of 150 patients presenting with Abnormal uterine bleeding, conducted in the Department of Obstetrics & Gynaecology, All India Institute of Medical Sciences, Patna, from May 2014 to July 2016. Clinical diagnosis with ultrasonography and hysteroscopic findings were assessed and statistical agreement (kappa coefficient) was calculated.
Results: Comparing findings of hysteroscopy with that of transvaginal ultrasonography the value of Kappa was found to be 0.448 which shows that there is intermediate to good agreement between the findings
Conclusions: Hysteroscopy is an effective tool to diagnose uterine cavitary lesions in abnormal uterine bleeding.

Keywords: Abnormal uterine bleeding, Diagnostic hysteroscopy, Menorrhagia, Ultrasonography

INTRODUCTION

Abnormal uterine bleeding is common in women of reproductive as well as perimenopausal age and has social and economic burden due to iron deficiency anemia and chronic illness. Abnormal (mostly excessive) menstrual bleeding is one of the main reasons why premenopausal women consult a gynaecologist. Up to 30% of women may seek medical assistance for this problem during their reproductive years.[1] The differential diagnosis of abnormal uterine bleeding is heterogeneous including systemic, anatomical and hormonal causes as well.

Abnormal uterine bleeding (AUB) may be defined as any variation from the normal menstrual cycle, and includes change in regularity or frequency of menses, in duration of flow, or in amount of blood loss.[2] Depending upon timing, duration, amount, regularity and frequency, AUB is divided into heavy menstrual bleeding, frequent/infrequent, intermenstrual, post coital, pre/post menstrual bleeding, prolonged/shortened periods, acute and chronic AUB. The PALM-COEIN (polyp; adenomyosis; leiomyoma; malignancy and hyperplasia; coagulopathy; ovulatory dysfunction; endometrial; iatrogenic; and not yet classified) classification system for AUB, which has been approved by the International Federation of Gynecology and Obstetrics (FIGO) as a FIGO classification system has been used this document

as much as possible.[3] A methodical evaluation from a careful history and physical and pelvic examination would help in reaching a clinical diagnosis, complemented with conventional investigations like imaging and diagnostic D&C. The uterine and endometrial causes can be evaluated better by saline infusion sonography (SIS), dilatation and curettage, endometrial biopsy/aspiration or hysteroscopy. USG shows uterine contour better than studying the endometrium (TVS and SIS can aid detect cavity defects). It helps in the diagnosis of fibrois, adenomyosis, polyps, uterine anomalies, and thickened endometrium which may be due to hyperplasia or malignancy.[4] D&C (Dilatation & Curettage) being a blind procedure, is not accurate for diagnosing focal intrauterine lesions such as endometrial polyps or submucous fibroids.[5] D&C is an inadequate diagnostic tool for uterine focal lesions, but the accuracy of D&C in the detection of endometrial hyperplasia and carcinoma is relatively high (92.1%).[6] However, it requires skill and can be complicated by tears, perforations and adhesion formation.

Hysteroscopy offers quick and safe method of direct visualization of cavitary pathology and also facilitate treatment and directed biopsy in same sitting. With office hysteroscopes (newer smaller calibre scopes), admission and anaesthesia is not required and an outpatient day care procedure can be done. Diagnostic hysteroscopy is both accurate and feasible in the diagnosis of intrauterine abnormalities.[7] Ultrasonography and Hysteroscopy are specially needed where patient is at risk of malignancy or history and examination suggests structural causes for bleeding especially when conservative medical treatment has failed. The objective of this study was to evaluate the role of hysteroscopy in diagnosing cause of abnormal uterine bleeding and compare the findings of hysteroscopy and USG.

METHODS

The study was a retrospective study conducted in the Department of Obstetrics & Gynaecology, AIIMS Patna, from May 2014 to July 2016 (a time period of 2 year 3 months). Patients who underwent diagnostic hysteroscopy for the complaints of AUB like heavy menstrual bleeding, irregular menstrual bleeding, prolonged bleeding, frequent bleeding, intermenstrual spotting, post abortal abnormal bleeding etc in our department, were included in the study. All hysteroscopies were done by diagnostic 2.7 mm 30° hysteroscope (Olympus make) under intravenous sedation. Hysteroscopy done on patients for evaluation of cavity and biopsy in cases of infertility (for tuberculosis), recurrent pregnancy loss and post-menopausal bleeding were excluded from the study. There were 150 hysteroscopic procedures for abnormal uterine bleeding during this period and data was analysed to fulfil the objective of study. Data was collected from the case records retrospectively, full history of menstrual abnormalities, duration of complaints, obstetric, medical, surgical history and details of previous treatment. Clinical evaluation of general, systemic and gynaecological examination was taken to make a clinical diagnosis and excluding non-uterine cause. Then the medical records , ultrasound findings and proliferative phase hysteroscopic findings of the included cases were taken for analysis of study result data obtained was analyzed using the Statistical Package for Social Sciences (SPSS) version 17 statistical package.

RESULTS

Menorrhagia was the most common presentation of AUB seen in 40.6% of women.

Age distribution

From total 150 patients the mean age of presentation was 36.6 years. Out of total patients, 58 % were from age group 31 to 50 years (Table 1).

Table 1: Age distribution in patients.

Age (years)	No. of patients (n=150)	Percentage
≤30	51	34
31-40	48	32
41-50	39	26
>50	12	8

Parity distribution

Multipara women were major group (54%) in all, 14.7% were grand multipara while 31.3% of women were either nulliparous or had prior abortions only, as shown in Table 2.

Table 2: Parity distributions of patients.

Parity	No. of patients (n=150)	Percentage
Parity ≤ 1	47	31.3
Multipara	81	54
Grand multipara	22	14.7

Duration of symptoms

Mean duration of symptoms were 7.3 months. 42.7% of women had symptoms lasting from 6months to 1 year of duration. Most patients had chronic AUB (Table 3).

Table 3: Durations of symptoms.

Duration of symptoms	No. of patients (n=150)	Percentage
<6 mths	50	33.3
6mths -<1 yr	64	42.7
1 yr – 2yr	26	17.3
>2yr	10	6.7

Hysteroscopic findings

Most common abnormality detected in AUB patients were endometrial polyp seen in 18.6% of cases. 14.66% patients were seen with hyperplastic endometrium. 15% showed myoma indenting uterine cavity. 8% had uterine anomalies and 7.3% showed retained product of conception. 10.6% had endocervical polyp. An additional benefit of hysteroscopy being simultaneously removal of focal pathology or endometrial biopsy from suspected or whole area can be taken (Table 4).

Evaluating clinical diagnosis by hysteroscopy and USG

Hysteroscopy could detect 93/150(62%) abnormalities, whereas USG detected 80/150(53.3%). Hysteroscopy showed 24.7% (n=37/150) of abnormal finding while USG showed 21.3% (n=32/150) of abnormalities in patients having menorrhagia. 11.3% of patients clinically presenting with polymenorrhoea had abnormality seen 8% (n=150) at hysteroscopy and 5% (n=150) at USG. Hysteroscopy showed 8.3% (n=150) of abnormal finding while USG showed 8% (n=150) of abnormalities in patients with perimenopausal AUB, those were 14% of total cases. 8% of patients clinically presenting with postabortal AUB had 5.3% (n=150) of abnormality seen at hysteroscopy and 6.7% (n=150) at USG (Table 5 and 6). Hysteroscopy was especially beneficial in diagnosing uterine anomalies in which USG was less accurate. Both hysteroscopy and USG were effective in diagnosing retained products of conception, with an advantage of removal of adherent old product of conception or bony chips under direct vision with hysteroscopy. In three cases, negotiation of cervical canal by hysteroscopy failed due to dense adhesions and stenosed canal. Since USG showed no intracavitary lesion in those cases they were taken to be normal. To study the agreement between USG based findings and Hysteroscopy based finding we calculated the Kappa statistic as per the date shown in the Table 7.

Table 4: Hysteroscopic findings.

H°	No. of patients (n=150)	Percentage
Endocervical polyp	16	10.6
Hyperplasia/polypoidal endometrium	22	14.66
Endometrial polyp (AUB-P)	28	18.6
IM myoma indenting cavity (AUB-L)	10	15
Septate/bicornuate uterus	12	8%
RPOC/bony chips	11	7.3%
Endometrial cyst	1	0.7%

Table 5: Clinical diagnosis and hysteroscopy.

Clinical diagnosis	No. of patients	Hysteroscopy normal	Hysteroscopy abnormal
Menorrhagia	61 (40.6%)	24	37(24.7%)
Metrorrhagia	6(4%)	2	4(2.6%)
Menometrorrhagia	8(5.3%)	1	7(4.6%)
Polymenorrhoea	17(11.3%)	8+ 1failed	8(5.3%)
Intermenstrual bleeding	14(9.3%)	3	11(7.3%)
Perimenopausal AUB	22(14.6%)	7+2failed	13(8.6%)
Postabotal AUB	12(8%)	4	8(5.3%)
Postmenstrual spotting	8(5.3%)	4	4(2.6%)
Postcoital bleeding	2(1.3%)	1	1(0.6%)
TOTAL	**150**	**57**	**93(62%)**

Table 6: Clinical diagnosis and ultrasonography.

Clinical diagnosis	No of patient	Normal USG	Abnormal USG
Menorrhagia	61(40.6%)	29	32(21.3%)
Metrorrhagia	6(4%)	2	4(2.6%)
Menometrorrhagia	8(5.3%)	1	7(4.6%)
Polymenorrhoea	17(11.3%)	9	8(5.3%)
Intermenstrual bleeding	14(9.3%)	9	5(3.3%)
Perimenopausal AUB	22(14.6%)	10	12(8%)
Postabotal AUB	12(8%)	2	10(6.7%)
Postmenstrual spotting	8(5.3%)	6	2(1.3%)
Postcoital bleeding	2(1.3%)	2	0
TOTAL	**150**	**70**	**80(53.3%)**

Table 7 showing the agreement between USG and Hysteroscopy findings in diagnosing menstrual abnormality.

Table 7: Kappa statistics.

	HY abnormal	HY normal	Total
USG Abnormal	65	13	78
USG Normal	28	44	72
Total	93	57	150

*HY – Hysteroscopic.

The value of Kappa was found to be 0.448 which shows that there is intermediate to good agreement between the findings from USG and Hysteroscopy.

DISCUSSION

In the present study, method success was 98% corresponds to the results of other studies like that of 96.9% in the study of Van Dongen et al, 98% in Sonja PTD et al., and 96% in the study of Nikolaou et al.[7-9] We got abnormal hysteroscopic findings in 62% of cases. The pathology of the uterine cavity was present in 58.9% of the patients (138/234) in the study of Sonja PTD et al. The results showing abnormal hysteroscopic findings were 80% in the study of Lasmar et al. 80%,and 69% in study of Sunitha et al.[10,11] In this study, most common hysteroscopy finding was endometrial polyp seen in 18.6% of patients. Similar result of the most common finding in undergoing hysteroscopy for AUB patients was seen as endometrial polyp (20.5%) in the study of Sonja PTD et al . In the study of Lasmar et al.[10] Endometrial polyps were reported in the hysteroscopic impression in 33.9% of the examinations, with histopathological confirmation in 27.5%. In other studies also most common abnormality detected was endometrial polyp as the abnormal hysteroscopic finding like 32.5% Raquel et al. and 37.6% Cordeiro et al.[12,13] Comparing findings of hysteroscopy with that of transvaginal ultrasonography the value of Kappa was found to be 0.448 which shows that there is intermediate to good agreement between the findings from USG and Hysteroscopy. Some studies have found kappa value to be 0.898 (SE 0.045, CI 0.810-0.985), comparing TVS and hysteroscopy findings, indicating very good strength of agreement between TVS and hysteroscopy for assessment of the uterine cavity in patients with AUB.[14] Hysteroscopy is significantly more sensitive (79%) and specific (93%) in diagnosing intracavitary pathologic disorders, whereas transvaginal ultrasonography had lower sensitivity (54%) and specificity (90%).[15]

CONCLUSION

In our set of patients of abnormal uterine bleeding, the most common type was menorrhagia (AUB/HMB) and most common hysteroscopic finding was endometrial polyp (AUB-P). Having intermediate to good agreement between the findings of USG and Hysteroscopy, both of the modalities should be used to evaluate the causes of abnormal uterine bleeding. With 98% method success rate and fewer complications diagnostic hysteroscopy is an effective tool to diagnose uterine cavitary lesions in AUB.

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